

Fire from Water

Australian inventor Yull Brown has found a way to economically split water into hydrogen and oxygen - a breakthrough which gives us water-powered welding and offers functioning, water-powered transport in the near future.

In a cramped workshop at the back of a suburban house in Auburn in Sydney's west, Mr Brown has developed the first commercial product based on the energy resource of the future - water. Scientists only recently started to take seriously the notion of a future "hydrogen economy" based on electrolysis of water, where an electric current is used to separate it into hydrogen and oxygen.

These two gases are usually highly explosive and are used as rocket fuel. Some scientists have refused to witness his experiments because of the explosiveness of hydrogen and oxygen.

But Mr Brown has been able to tame the mix into a safe gas, known as *Brown's gas* - using a specially designed electrolysis cell which doesn't separate the two gases at their origin, as is done conventionally. After 15 years work and a million dollars in development, he's launched a welding system based on his process.

He predicts cars and aeroplanes running on water supplied from the garden hose and powerlines replaced by pipes carrying gas to be reconverted to electricity.

When he arrived from Bulgaria in 1957, Mr Brown's qualifications as an electrical engineer weren't accepted. Now he's one of Australia's best known inventors (and least-recognised scientists).

His inventions have been dismissed as elaborate trickery, yet Mr Brown has covered his technology with over 100 patents in 31 countries and recently floated a \$1 million company on the second board of the Hobart stock exchange.

The first commercial technology of its kind, the gas in Mr Brown's welding system has extraordinary features and doesn't seem to produce harmful light or vapours. At one moment the flame can be the temperature of a candle and you can wave your finger through it. *Then, without adjustment, it will melt and split granite or fuse metal and house bricks together*, although industrial gas experts swear this is impossible and scientists who have witnessed it are at a loss to explain

the principle.

Mr Brown theorises that the temperature of the flame is determined at the surface of the material through an "interactive process" between the hydrogen molecules and atomic bonds in the object. He's now taking orders for his welder (A\$4,500) and a larger version of the device is about to be sent to the United States to test its ability to destroy plutonium and other toxic waste.



Mr Brown ... his gas burns a hole through a house brick — Picture: ALAN PRYKE

The Brown's gas generator and welder has up to 30 different applications. To operate it, water is pumped into the unit and the hydrogen and oxygen are separated and compressed to form a gas. Brown's gas can be used as a flame or energy source; for use as an energy source it's detonated by a spark that forms a vacuum. Atmospheric pressure then sucks water or any other liquid through the container or hollowed area. When set alight it can reach 6,000°C - as hot as the surface of the sun.

"The flame created by the generator is the highest temperature on Earth and can turn tungsten to vapour or gas," Mr Brown said last March. He successfully ran a car engine on water using the device and is researching the possibility of simply installing the generator in existing cars. Electricity and water are all that's needed to run the unit, which is cheaper than most conventional generators.

Scientific Demonstration

Professor Brynn Hibbert, professor of analytical chemistry at the University of New South Wales, recently arrived from Britain where he held senior posts researching fuel-cell technology. He said that he'd usually be a "bit twitchy" about working with hydrogen and oxygen, but took part in a demonstration of Brown's gas in October anyway.

He said afterwards that on face value Yull Brown seemed to have found a way of efficiently producing a mixture of hydrogen and oxygen that was safe to use.

"What may enrage the scientific community are some of the claims that this gas has very special properties."

"One of the more extravagant of these is that the gas produced in his process will destroy unwanted plutonium and also produces heavy water.

"There is a whole range of criticisms directed at this based on what is the known chemistry of these type of gases, through to our knowledge of thermonuclear reactions."

Mr Brown's most contentious suggestion was that *additional rare hydrogen and oxygen atoms*

were generated in his process. Professor Hibbert said that *from what was known* of these atomic species they'd be too short-lived to travel out of the electrolytic cell and down the gas hoses, but admitted he had no explanation as to why the gas performed in all the ways he had seen demonstrated.

At Mr Brown's invitation, Professor Hibbert left the Auburn workshop carrying one of the electrolytic cells that is the secret to Mr Brown's technology under his arm.

The use of Brown's gas for transportation and energy generation is the best way so far demonstrated to overcome the greenhouse effect economically, effectively and quickly. If put into immediate application, much of the threat to the biosphere of Planet Earth will be immediately removed ★

- R.A.

SMH 13-9-88 & Aust 30-3-88